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EXAMINER	
ADHAMI, MOHAMMAD SAJID	
ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/029,356	RAJAGOPAL ET AL.	
	Examiner	Art Unit	
	Mohammad S. Adhami	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-22* is/are rejected.

7)☒ Claim(s) *2 and 3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- Applicant's Amendment filed 10/12/2005 is acknowledged.
- Claim 2 has been amended.
- Applicant's response and amendment with respect to the first action rejection of claim 2 under 35 USC 112-1st paragraph is noted and the rejection is withdrawn.
- Claims 1-22 are pending

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,4-7,17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda (US 6,882,627) in view of Rhodes (US App. 10/095,862).

Re claim 1:

Pieda discloses a machine-implemented method of managing communications (Col. 1 line 8-10).

Pieda further discloses identifying a current path from a source node to a destination node and identifying a detour path comprising a first and second path (Col. 2 line 13-15 and 24-25 and Figure 6E where

reference 210 is a "current path" and reference 212 is made of a "first path" from node A to node D and a "second path" from node D to node Z).

Peida further discloses converting the detour path into an alternate path, which includes at least one current path segment that is different from the alternate path segments (Col. 8 lines 15-16).

Pieda further discloses a hierarchical network, but does not explicitly disclose a packet-switched network.

Rhodes discloses a packet-switched network (Para. [0003]).

Pieda and Rhodes are analogous because they both pertain to communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Rhodes in order to efficiently transmit data and use the benefits presented with a packet-switched network.

Re claim 17:

Pieda discloses identifying a current path from a source node to a destination node and identifying a detour path comprising a first and second path (Col. 2 line 13-15 and 24-25 and Figure 6E where reference 210 is a "current path" and reference 212 is made of a "first path" from node A to node D and a "second path" from node D to node Z and Col.9 lines 30 and 31 "the identification of paths through the transformed topology is done using any know method").

Pieda further discloses "validating the detour path for the source-destination pair if the current path includes at least one segment not in the detour path" (Col. 8 lines 15 and 16 where if a path is formed, has been "validated").

Pieda further discloses a hierarchical network, but does not explicitly disclose a packet-switched network.

Rhodes discloses a packet-switched network (Para. [0003]).

Pieda and Rhodes are analogous because they both pertain to communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Rhodes in order to efficiently transmit data and use the benefits presented with a packet-switched network.

Re claim 4:

Pieda discloses storing values (Col. 5 lines 64-65) for one or more attributes of the current and alternate path.

Pieda does not explicitly disclose receiving a service specification for a network communication and using either the current path or alternate path based on the service specification.

Rhodes discloses receiving a "service specification" and selecting either the current path or alternate path based on the service specification (Paragraph [0004]).

Pieda and Rhodes are analogous because they both relate to communication routes.

It would have been obvious to one with ordinary skill in the art at the time of the invention to modify Pieda to receive a service specification and choose a path based on the specification as taught by Rhodes in order to provide more efficient network traffic flow.

Re claim 5:

Pieda discloses the attributes mentioned to be jitter, latency, or bandwidth (Col. 6 lines 11-15).

Re claim 6:

As discussed above, Pieda meets all the limitations of the parent claims.

Pieda does not explicitly disclose using a "configurable" algorithm to compare service specifications.

Rhodes discloses using a "configurable algorithm" to compare service specifications in order to choose a current path or alternate path (Paragraph [0023]).

Pieda and Rhodes are analogous because they both are related to communication routes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda to include a configurable algorithm to compare service specifications in order to choose a current path or

alternate path as taught by Rhodes in order to choose the most efficient path for data transmission.

Re claim 7:

Pieda discloses "rerouting one or more flows affected by an identified segment failure" (Col. 1 lines 33-38).

Pieda does not explicitly disclose identifying failure of a segment.

Rhodes discloses identifying failure of a segment (Paragraph [0030]).

Pieda and Rhodes are analogous because they both are related to communication routes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda to include a method to identify failure of a segment as taught by Rhodes in order to centralize the steps in handling failed segments.

Re claim 18:

As discussed above, Pieda meets all the limitations of the parent claim.

Pieda further discloses storing values (Col. 5 lines 64-65) for one or more attributes of the current and alternate path, and selecting an alternate path if the current path is "unsuitable" (Col. 7 lines 22-23).

Pieda does not explicitly disclose a packet-switched network receiving a service specification for a network communication and using either the current path or alternate path based on the service specification.

Rhodes discloses a "packet-switched network" (Paragraph [0003]) receiving a "service specification" and selecting either the current path or alternate path based on the service specification (Paragraph [0004]).

Pieda and Rhodes are analogous because they both relate to communication routes.

It would have been obvious to one with ordinary skill in the art at the time of the invention to modify Pieda to use a packet-switched network that receives a service specification and chooses a path based on the specification as taught by Rhodes in order to provide more efficient network traffic flow.

3. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Rhodes as applied to claim 4 above, and further in view of Graves (US App. 09/893,493).

Re claims 8 and 9:

As discussed above, Pieda meets all the limitations of the parent claims.

Pieda does not explicitly disclose "identifying when occupancy of a segment becomes greater than a predefined percentage of bandwidth" and rerouting the "flow" that uses the segment.

(Claims 8 and 9) Graves discloses "identifying when occupancy of a segment becomes greater than a predefined percentage of bandwidth" and rerouting the "flow" that uses the segment (Paragraph [0157]).

Graves further discloses (Claim 9) dividing the flow between two or more paths (Paragraph [0157]).

Pieda and Graves are analogous because they both relate to communication network.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda to include means for identifying that a certain bandwidth capacity has been reached and accordingly rerouting traffic between two or more paths as taught by Graves in order to prevent network congestion and bottlenecking.

4. Claims 10,11,13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Rhodes and further in view of Kawakami (US App. 2001/0044842).

Re claim 10:

Pieda discloses "three or more network nodes" (Figure 6E where the letters are network node).

Pieda further discloses a machine-implemented method of managing communications (Col. 1 line 8-10).

Pieda further discloses "identifying current paths used by the...network for traffic sent among the three or more network nodes" "combining the current paths using at least one detour node to derive alternate paths through the network node" (Col. 2 line 13-15 and 24-25 and Figure 6E where reference 210 is a "current path" and node D is a "detour node" and reference 212 is an "alternate path" and Col. 9 lines 30

and 31 "the identification of paths through the transformed topology is done using any know method"),

Pieda further discloses storing values (Col. 5 lines 64-65) for one or more attributes of the current and alternate path.

Pieda further discloses selecting an alternate path if the current path is "unsuitable" (Col. 7 lines 22-23).

Pieda does not explicitly disclose receiving a service specification for a network communication and using either the current path or alternate path based on the service specification.

Rhodes discloses receiving a "service specification" and selecting either the current path or alternate path based on the service specification (Paragraph [0004]).

Pieda and Rhodes are analogous because they both relate to communication routes.

It would have been obvious to one with ordinary skill in the art at the time of the invention to modify Pieda to use a packet-switched network that receives a service specification and chooses a path based on the specification as taught by Rhodes in order to provide more efficient network traffic flow.

Pieda does not explicitly disclose a "virtual private network having three or more network nodes coupled with a larger network."

Kawakami discloses a "virtual private network having three or more network nodes coupled with a larger network" (Figure 1 where reference

C1 is a "larger network" and reference 41,42, and 43 are "network nodes").

Pieda and Kawakami are analogous because they both pertain communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Kawakami in order to enable communication between different networks.

Re claim 11:

Pieda discloses storing values (Col. 5 lines 64-65) for one or more attributes of the current and alternate path (Col. 6 lines 11-15).

Re claim 13:

Pieda discloses the attributes may be jitter and latency (Col. 6 lines 11-15).

Re claim 16:

Pieda discloses "identifying a detour path comprising a first path from a source node of the three or more network nodes, to a detour node of the three of more network nodes, and a second path from the detour node to a destination node of the three or more network nodes" (Figure 6E where reference A is a "source node" and reference D is a "detour node" and the path between them is a "first path" and reference Z is a "destination node" where the path between node D and node Z is a "second path").

Pieda further discloses "converting the detour path into an alternate path if the current path includes at least one segment that would not be included in the alternate path after conversion" (Col.8 lines 15 and 16).

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Rhodes and Kawakami as applied to claim 11 above, and further in view of Graves.

Re claim 12:

As discussed above, Pieda meets all the limitations of the parent claims.

Pieda does not explicitly disclose "identifying when occupancy of a segment becomes greater than a predefined percentage of bandwidth" and rerouting the "flow" that uses the segment.

Graves discloses "identifying when occupancy of a segment becomes greater than a predefined percentage of bandwidth" and rerouting the "flow" that uses the segment (Paragraph [0157]).

Graves further discloses dividing the flow between two or more paths (Paragraph [0157]).

Pieda and Graves are analogous because they both relate to communication network.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda to include means for identifying that a certain bandwidth capacity has been reached and accordingly rerouting

traffic between two or more paths as taught by Graves in order to prevent network congestion and bottlenecking.

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Rhodes, and Kawakami as applied to claim 13 above, and further in view of Scott (US 6,816,464) and Karam (US App. 2003/0161321).

Re claims 14 and 15:

As discussed above, Pieda meets all the limitations of the parent claims.

Pieda does not explicitly disclose using average delay and jitter values that vary with an indication of length.

Scott discloses averages of "jitter and latency" (Col. 3 lines 12-15) that vary with an "indication of length" for the network communication (Col. 1 lines 26-28).

Pieda and Scott are analogous because they both pertain to network communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda in view of Rhodes to use average jitter and latency values that vary with an indication of length as taught by Scott in order to have more accurate jitter and latency measurements.

Pieda does not explicitly disclose "exponential averages of jitter and latency."

Karam discloses "exponential averages of jitter and latency" (Para.[0266] "average delay can be computed using an exponentially moving average" and Para.[0268] "average jitter can be computed using an exponentially moving average").

Pieda and Karam are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Karam in order to give more current values greater importance in determining path conditions.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Rhodes and further in view of Kawakami.

Re claim 19:

Pieda discloses "three or more nodes" (Figure 6E where the letters are nodes).

Pieda further discloses "identifying current paths...passing through the connecting network" (Col. 2 line 13-15 and 24-25 and Col.9 lines 30 and 31 "the identification of paths through the transformed topology is done using any known method").

Pieda further discloses "combining the current paths to derive alternate paths through the connecting network" (Col. 8 lines 15-16 and Figure 6E).

Pieda further discloses storing values (Col. 5 lines 64-65) for one or more attributes of the current and alternate path, and selecting an alternate path if the current path is "insufficient" (Col. 7 lines 22-23).

Pieda does not explicitly disclose "three or more separate networks; three or more nodes each respectively couple with the three or more separate networks, and with a connecting network, which enables machine communications to pass among the three or more separate networks via the three or more nodes."

Kawakami discloses "three or more separate networks; three or more nodes each respectively couple with the three or more separate networks, and with a connecting network, which enables machine communications to pass among the three or more separate networks via the three or more nodes" (Figure 1 where references A1, A2, and A3 are separate networks and references 41,42,and 43 are nodes that couple with networks, as explicitly shown for references 41 and 43 and where reference C1 is a connecting network and Para. [0008] "communication between the customer networks A1,A2, and A3 is performed through VPN established by a tunnel...formed between the edge nodes").

Pieda and Kawakami are analogous because they both pertain communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Kawakami in order to enable communication between different networks.

Pieda does not explicitly disclose receiving a service specification for a network communication and using either the current path or alternate path based on the service specification, three or more nodes coupled with a connecting network to three or more separate networks, and a traffic management server coupled with a network.

Rhodes discloses receiving a "service specification" and selecting either the current path or alternate path based on the service specification (Paragraph [0004]).

Pieda and Rhodes are analogous because they both relate to communication routes.

It would have been obvious to one with ordinary skill in the art at the time of the invention to modify Pieda to receive a service specification and choose a path based on the specification as taught by Rhodes in order to provide more efficient network traffic flow.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Rhodes and Kawakami as applied to claim 19 above, and further in view of Graves.

Re claim 20:

As discussed above, Pieda meets all the limitations of the parent claims.

Pieda does not explicitly disclose "identifying when occupancy of a segment in one of the current paths becomes greater than a predefined percentage of bandwidth capacity for the segment."

Graves discloses "identifying when occupancy of a segment in one of the current paths becomes greater than a predefined percentage of bandwidth capacity for the segment" (Paragraph [0157]).

Pieda and Graves are analogous because they both pertain to communication network.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Graves in order to prevent network congestion and bottlenecking.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Kawakami, Rhodes, and Hultgren (US 6,134,589).

Re claim 21:

Pieda discloses "three or more nodes" (Figure 6E where the letters are nodes).

Pieda further discloses combining "current paths for the machine communications to derive alternate paths through the connecting network" (Col. 8 lines 15-16 and Figure 6E and Col. 2 line 13-15 and 24-25).

Pieda further discloses maintaining a "data structure to store values for one or more path attributes for each of the current paths and for each of the alternate paths" (Col. 5 lines 64-65) "to be used in selectively routing machine communications among the three or more nodes" (Col. 7 lines 22-23).

Pieda does not explicitly disclose "three or more separate networks; three or more nodes coupled with the three or more separate networks

respectively, and with a connecting network, which enables machine communications to pass among the three or more separate networks via the three or more nodes."

Kawakami discloses "three or more separate networks; three or more nodes coupled with the three or more separate networks respectively, and with a connecting network, which enables machine communications to pass among the three or more separate networks via the three or more nodes" (Figure 1 where references A1, A2, and A3 are separate networks and references 41,42,and 43 are nodes that couple with networks, as explicitly shown for references 41 and 43 and where reference C1 is a connecting network and Para. [0008] "communication between the customer networks A1,A2, and A3 is performed through VPN established by a tunnel...formed between the edge nodes").

Pieda and Kawakami are analogous because they both pertain communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Kawakami in order to enable communication between different networks.

Pieda does not explicitly disclose "a traffic management server couple with a network and in machine communication with the three or more nodes."

Hultgren discloses "a traffic management server couple with a network and in machine communication with the three or more nodes"

(Col.1 lines 58-61 where the "quality connection server" is the traffic management server).

Pieda and Hultgren are analogous because they both pertain to network communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Hultgren in order to centralize control of the nodes and have communication between the different networks.

10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieda in view of Rhodes, Kawakami, and Hultgren as applied to claims 19 and 21 above, and further in view of Graves.

Re claim 22:

As discussed above, Pieda meets all limitations of the parent claim.

Pieda does not explicitly disclose identifying when a certain bandwidth capacity has been reached and rerouting traffic based on the bandwidth capacity.

Graves discloses "identifying when occupancy of a segment becomes greater than a pre-defined percentage of bandwidth" and rerouting the "flow" that uses the segment (Paragraph [0157]).

Graves further discloses dividing the flow between two or more paths (Paragraph [0157]).

Pieda and Graves are analogous because they both relate to communication network.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda to include a means of identifying reaching a certain bandwidth capacity and accordingly rerouting traffic as taught by Graves in order to prevent network congestion and bottlenecking.

Pieda does not explicitly disclose nodes "configured to track path occupancy per flow."

Hultgren discloses nodes "configured to track path occupancy per flow" (Col.4 lines 12-21).

Pieda and Hultgren are analogous because they both pertain to network communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pieda as discussed above as taught by Hultgren in order to route traffic based on quality measures.

Allowable Subject Matter

11. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not disclose or reasonably suggest "determining whether the current path is a sub-path of the first path" as disclosed by the Applicant.

Response to Arguments

12. Applicant's arguments filed 10/24/2005 have been fully considered but they are not persuasive.

- In the Remarks on pg.14 of the Amendment, Applicant contends that Peida fails to describe identification of a detour path or use of a detour node.

- The Examiner respectfully disagrees. The previous Office Action filed 8/8/2005 references Col.2 lines 13-15 and 24 and 25 where Pieda states "identifying a second path through the virtual topology from the source node to the destination node" where the second path is a "detour path." Additionally, Figure 6E of Pieda shows a detour path, reference number 212 from node A to a detour node D and from detour node D to node Z. Further, Col.9 lines 30 and 31 states "the identification of paths through the transformed topology is done using any known method" where detour path 212 is an example of such an identified path.

- In the Remarks on pg.16 of the Amendment, Applicant contends that Pieda does not describe converting a detour path into an alternate path by comparing segments of a current path and a detour path and determining a sub-path relationship between a current path and a detour path.

- The Examiner respectfully disagrees. The "detour path" is made in comparison to "current path" segments as shown in Col. 2 line 13-15 and

24-25 and Col.8 lines 15-16. Segments of the current path are compared to the "detour path" when checking to see that there is not overlap. Once all the "detour paths" have been determined, then the alternate path is made. The determination of a sub-path relationship is done when the current path is compared to the detour path.

13. Applicant's arguments with respect to claims 2,3,10,14,15,19, and 21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Riggan (US 5,898,673) is cited for showing identification of when bandwidth usage becomes greater than a predefined percentage of the bandwidth capacity, rerouting the flow based on bandwidth, and a network manager. Worster (US App. 2002/0097732) shows a virtual private network and 3 separate networks coupled to 3 nodes and with a connecting network. Lisiecki (US App. 2002/0147774) shows calculating exponential average latency.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad S. Adhami whose telephone number is (571)272-8615. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
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MSA 1/6/2006